

# CUBIT Capability Proposal

## Technical Area

Geometry, Meshing, Infrastructure, GUI, Graphics, etc..

## Technical Lead

Cubit Developer in charge of technical area

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| Meshing | Matt Staten |
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## MRD Description

Describe the capability in terms of how a user would see it.

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| Improve control of CAMAL meshers |
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## SRS Description

What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

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| <ol style="list-style-type: none"><li>1. Modify all CAMAL meshers to return mesh in buffers instead of all at once</li><li>2. Modify CAMAL infrastructure to use light weight node/edge data structures</li><li>3. Modify CAMAL meshers to support control variables that may be set in Cubit but ignored in CAMAL.</li></ol> |
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## Justification

Describe why this is important and what impact it will have if it is implemented. (or not implemented).

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| <p>Some CAMAL meshers return the generated mesh one buffer at a time. This is much more efficient than requiring the calling program to allocate a chunk of memory large enough to hold the entire mesh. All of the CAMAL meshers need this capability to increase the size of mesh that may be generated and used by Cubit. (See MRD 4.2.2.0-5, 4.3.0-3, etc.</p> |
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| <p>The requirements of the paver and the tri-advance mesher are significantly different in the data necessary at each node. Currently, they use the same node class. Using a specialized node class for each will reduce the memory required for each, especially the tri mesher allowing for bigger meshes.</p> |
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| <p>Communicate control variable settings from Cubit to CAMAL so that advanced users will have greater control of the meshing process.</p> |
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## Resources

Who will work on this

## Time estimate

How much time will it take in man-weeks

## Targeted Release

10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)

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| Michael Stephenson | 4 man-weeks | 10.2 |
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## Submitted By:

## Date:

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| Michael Stephenson | 3/27/2006 |
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